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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,657	12/19/2005	Jorge E. Caviedes	USO30198	1343
24737 7590 03/13/2009 PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510				
EXAMINER				
DANG, DUY M				
ART UNIT		PAPER NUMBER		
2624				
MAIL DATE		DELIVERY MODE		
03/13/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/561,657

Applicant(s)

CAVIEDES, JORGE E.

Examiner

Duy M. Dang

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date 12/19/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

1. Applicant's preliminary amendment filed on December 19, 2005 has been entered and made of record.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "*repeating...*" in claims 1 and 26 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-24 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In this case, claim 1 as a representative claim requires to the step of “repeating...” to determine and compensate for each of the one or more blocks which are obtained by partitioning the image/picture. However, the current specification, at page 8 lines 8-22 (“Turning to FIG. 1...(element 18)”) describes “kurtosis-based sharpness metric of the image is determined” which is also depicted at 12 of figure 1. This suggests to “determine kurtosis-based sharpness metric for the image” and does not suggest such *repeating*. That is, the current specification does not provide support for repeating determining and compensating for each of the one or more blocks.

Likewise, claims 2-24 and 26 are rejected for the same reasons as above.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites the limitation "The ratio" and "the combined" in last two lines. There is insufficient antecedent basis for this limitation in the claim. Furthermore, the present of "." (period) before "The ratio" renders claim vague.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1 and 25 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In this case, all method claims 1 and 25 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. Supreme Court precedent (See *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876)) and recent Federal Circuit decisions (See *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008)) indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to "a particular apparatus", or (2) transform underlying subject matter (such as an article or material) to a different state or thing. While the instant claims recite a series of steps or acts to be performed, the claims neither transform underlying subject matter nor positively tie to "a particular apparatus" that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. The tied apparatus must perform the inventive steps, not the pre-solution activity or post-solution activity.

Specifically, claim 1 as representative claim, contains the following steps:

-partitioning the image or picture into one or more blocks, each of which has a predetermined size and repeating the following for each of the one or more blocks:

determining a kurtosis-based sharpness metric of the image; and

compensating the kurtosis-based sharpness metric to account for differences in sharpness enhancement in a horizontal direction and vertical direction.

Each of these steps does not call for any transformation of an article to a different state or thing, nor does it require any transformation of image or picture. While claim does recite "image or picture", such "image or picture" does not represent any physical object or substance. Further, claim does not recite any particular machine or apparatus to the perform the recited steps and thus does not recite a statutory process under Bilski.

Likewise, claim 25 is also rejected for the same reasons as set forth above.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1, 25 and 26 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3 of U.S. Patent No. 6,888,564 (referred as the patent '564 hereinafter). An obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but an examined application claim is not patentably distinct from the reference claim(s) because the examined claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the reasons as below.

In this case, as to the instant claim 1 as a representative claim, the claim 3 (note that claim depends from claim 2 which depends from claim 1 so claim 3 would include all features called for in claims 1-2) of the patent '564 generally teach all that are claimed in the instant claims. For example, the patented claim 2 teaches:

- partitioning the image or picture into one or more blocks, each of which has a predetermined size and repeating the following for each of the one or more blocks (see a)-d) of patented claim 1 and "repeating" in patented claim 2):

- determining a kurtosis-based sharpness metric of the image (see f) of patented claim 1);

and

- compensating the kurtosis-based sharpness metric to account for differences in sharpness enhancement in a horizontal direction and a vertical direction (see "averaging..." in patented claim 3).

While the patented claim includes additional limitations not set forth in the instant claim 1, the use of transition term “comprising” in the instant claim preclude the possibility of additional elements. Therefore, claim 1 of the instant application fails to define an invention that is patentably distinct from patented claim 3.

Claims 25 of the instant application is also rejected for the same reasons as set forth above.

Regarding claim 26, it is noted that this claim is an apparatus type claim reciting features called for in the corresponding method 1. However, instant claim 26 is not patentably distinct from patented claim 3 because, given the considerable level of skill in the art of image processing, one skilled in the art would have found it obvious to make and use an apparatus for performing the method defined by instant claim 1.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Caviedes et al. (“No-Reference Sharpness Metric Based on Local Edge Kurtosis”, IEEE ICCP, Vol. 3, pages: 53-56, Publication Date 24-28 June 2002, Art of record IDS filed 12/19/2005, referred as Caviedes hereinafter).

Regarding claim 1 as a representative claim, Caviedes teaches a method for measuring sharpness in an image or picture comprising:

partitioning the image or picture into one or more blocks, each of which has a predetermined size (see abstract, figure 2 and segmentation described in section 3) and repeating the following for each of the one or more blocks (see figure 2, first diamond (“Done?”) box after “Calculate 2-D kurtosis of PDF” box);

determining a kurtosis-based sharpness metric of the image (see abstract, figure 2 and sections 2-4. Note “For each block, we compute sharpness using kurtosis of the DCT” mentioned in abstract, for example); and

compensating the kurtosis based sharpness metric to account for differences in sharpness enhancement in horizontal direction and vertical direction (see abstract, figure 2 and sections 2-4. Note that “averaging” corresponds to the so called “compensating”).

Regarding claim 25, Caviedes teaches a method for measuring sharpness in an image or picture comprising:

performing DCT on each of a plurality of blocks of a predetermined size of the image (see abstract, figure 2); and

compensating for asymmetry using information on a number of edge pixels and an energy content of one or more vertical edges and one or more horizontal edges in each of the plurality of blocks (see abstract, figure 2 and section 3, where the number of edge pixel (detected in the process described in section 3) in the horizontal and vertical directions characterizes the enhancement asymmetry in the horizontal and vertical directions. Furthermore, the kurtosis values, each computed for an edge pixel block, are averaged. This averaging is “compensating the kurtosis-based sharpness metric to account for differences in sharpness enhancement in a horizontal direction and a vertical direction.” The compensating step uses indeed information on

the number of edge pixels and the kurtosis values are computed based on DCT transformation of edge pixel blocks i.e., based on “energy content of one or more vertical edges and one or more horizontal edges in each of the plurality of blocks”).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caviedes.

The advanced statements as applied to claim 1 above are incorporated hereinafter. Caviedes further teaches an image detector (see figure 2) as additional required by claim 26. While Caviedes teaches sharpness processing as described in the preceding paragraphs, Caviedes does not implicitly teach sharpness controller for performing sharpness process. However, using such controller (i.e., computer) is well known and widely use method in the art (Official Notice) in order to speed up the process and enhance accuracy. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate such controller in combination with Caviedes for that reasons.

Conclusion

15. The cited prior art does not teach the claimed features as recited in claims 2-24 and 27-32.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Duy M. Dang whose telephone number is 571-272-7389. The examiner can normally be reached on Monday to Friday from 6:00AM to 2:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh M. Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

dmd
3/2009

/Duy M Dang/
Primary Examiner, Art Unit 2624